

Appl. No. : 09/824,462
Filed : April 2, 2001

AMENDMENTS TO THE CLAIMS

Please amend the Claim Form and Claim as follows. Insertions are shown underlined while deletions are ~~struck through~~.

1-4 (canceled)

5 (currently amended): A characteristic control device which is provided with:

a characteristic control module which controls ~~the characteristics of the control~~ parameters and is provided separately from a control device which is provided with a basic control module which ~~determines~~ outputs output values ~~the amount of control used~~ to control ~~the output of a control subject based on predetermined input data and control~~ parameters which relate the output values ~~to the control subject~~ to the input data,

said characteristic control module comprising:

a characteristic storage mechanism which stores ~~the basic control~~ parameters associated with characteristic data, and

a characteristic automatic modification mechanism which ~~determines and automatically modifies~~ outputs the control parameters ~~which are applied to the~~ basic control module, based on the basic control parameters and the characteristic date stored in the characteristic storage mechanism and the input date, said characteristic automatic modification mechanism (i) evaluating current characteristics of operation based on the input date, (ii) comparing the stored characteristic data and the current characteristics, and (iii) modifying the stored basic control parameters associated with the stored characteristic data based on the comparison of the current characteristics with the stored characteristic date, thereby outputting the control parameters.

6 (currently amended): A characteristic control device in accordance with Claim 5, wherein the characteristic automatic modification mechanism modifies ~~the a~~ ratio of the basic control parameters using fuzzy rules ~~and automatically modifies the control parameters applied to the basic control module.~~

7 (currently amended): A characteristic control device in accordance with Claim 5, ~~which is further provided with~~ comprising a user interface mechanism which permits a user to accept or not accept the modification of the basic control parameters ~~directly manipulate the fuzzy rules in the characteristic automatic modification mechanism.~~

8-16 (canceled)

17 (currently amended): A characteristic control device which is provided with:

a characteristic control module which controls ~~the characteristics of the control~~ parameters and is provided separately from a control device which is provided with a basic control module which ~~determines~~ outputs output values ~~the amount of control used~~ to control ~~the output of a control subject based on predetermined~~ input data and control parameters which relate the output values to the control subject to the input data,

said characteristic control module comprising:

a characteristic generation mechanism for generating basic control parameters associated with characteristic data adaptive to ~~that serve as the basis of the control parameters, in accordance with predetermined~~ evaluation standards while operating the control subject,

a characteristic storage mechanism which stores the basic control parameters associated with the characteristic data, and

a characteristic automatic modification mechanism which ~~determines and automatically modifies~~ outputs the control parameters ~~which are applied to the basic control module, based on the basic control parameters and the characteristic data stored in the characteristic storage mechanism and the input data,~~ said characteristic automatic modification mechanism (i) evaluating current characteristics of operation based on the input data, (ii) comparing the stored characteristic data and the current characteristics, and (iii) modifying the stored basic control parameters associated with the stored characteristic data based on the comparison of the current characteristics with the stored characteristic data, thereby outputting the control parameters.

18 (currently amended): A characteristic control device in accordance with Claim 17, further comprising ~~wherein the characteristic control device is provided with~~ a user interface mechanism that allows ~~the~~ a user to set the evaluation standards to select ~~directly manipulate the basic control parameters associated with the characteristic data generated by the parameter generation mechanism.~~

19 (currently amended): A characteristic control device in accordance with Claim 18, wherein the characteristic generation mechanism generates control parameter candidates,

Appl. No. : 09/824,462
Filed : April 2, 2001

evaluates the basic control parameter candidates based on the operational data from the user interface mechanism to select the basic control parameters, and determines characteristic data based on the input data, and outputs the basic control parameters associated with the characteristic data to the characteristic storage mechanism~~employs an evolutionary calculation method based on the results of this evaluation to generate basic control parameters.~~

20 (currently amended): A characteristic control device in accordance with Claim 17~~8~~, wherein the user interface mechanism is provided with a display mechanism which is capable of displaying at least one of characteristic data which express characteristics of the basic control parameters evaluated and generated by the characteristic generation mechanism, and a ratio of the basic control parameters modified by the fuzzy rules provided in the characteristic automatic modification mechanism.

21 (original): A characteristic control device in accordance with Claim 17, wherein the characteristic control device is made attachable to and detachable from the control device which controls the output of the control subject.

22 (original): A characteristic control device in accordance with Claim 17, wherein the characteristic control device comprises a standard computer.

23 (original): A characteristic control device in accordance with Claim 17, wherein the characteristic control device is provided with a communication mechanism which permits data communication with the control device.

24-28 (canceled)

29 (currently amended): A ~~method~~characteristic control device in accordance with Claim 24~~5~~, wherein at least one of the input data relate to travel characteristics of the control subject.

30 (currently amended): A ~~method~~characteristic control device in accordance with Claim 29~~5~~, wherein the input data relate to vehicle speed.

31 (currently amended): A ~~method~~characteristic control device in accordance with Claim 29~~5~~, wherein the input data relate to a rate of change in a degree of throttle opening.

32 (currently amended): A ~~method~~characteristic control device in accordance with Claim 29~~5~~, wherein the input data relate to fuel injection characteristics.

33 (currently amended): A ~~method~~characteristic control device in accordance with Claim 29~~5~~, wherein the input data relate to engine brake characteristics.

Appl. No. : 09/824,462
Filed : April 2, 2001

34 (currently amended): A ~~method~~characteristic control device in accordance with Claim 295, wherein the input data relate to exhaust noise level.

35 (currently amended): A ~~method~~characteristic control device in accordance with Claim 295, wherein the input data relate to weather conditions.

36 (currently amended): A ~~method~~characteristic control device in accordance with Claim 245, wherein at least one of the input data relate to the bodily condition of an operator of the control subject.

37 (currently amended): A ~~method~~characteristic control device in accordance with Claim 36, wherein the input data relate to body temperature.

38 (currently amended): A ~~method~~characteristic control device in accordance with Claim 36, wherein the input data relate to pulse rate.

39 (currently amended): A ~~method~~characteristic control device in accordance with Claim 36, wherein the input data relate to an amount of perspiration.

40 (currently amended): A ~~method~~characteristic control device in accordance with Claim 245, wherein at least one of the input data relates to identification of an operator of the control subject.

41 (currently amended): A ~~method~~characteristic control device in accordance with Claim 40, wherein the input data are derived from the pattern of operation.

42 (currently amended): A ~~method~~characteristic control device in accordance with Claim 40, wherein the input data relate to the fingerprint of the operator.

43 (currently amended): A ~~method~~characteristic control device in accordance with Claim 40, wherein the input data relate to the iris of the operator.

44-49 (canceled)

50 (currently amended): A ~~method~~characteristic control device in accordance with Claim 245, wherein, ~~in the step of acquiring at least one basic control parameter,~~ at least one basic control parameter stored in the characteristic storage mechanism is acquired via a network.

51-57 (canceled)

58 (new): A characteristic control device in accordance with Claim 19, wherein the basic control parameter candidates are created by evolutionary computation.